

REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated December 7, 2011. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-10 are pending in the Application. Claims 1 and 9 are independent claims.

In the Office Action, claims 6 and 9 are objected to for informalities. In response the Applicants have amended the objected to claims to correct the informalities pointed out by the Examiner. Accordingly, withdrawal of this objection is respectfully requested.

Claims 1 and 8 are rejected under 35 U.S.C. §112, sixth paragraph. In response, in the interest of expediting consideration and allowance of the pending claims, the rejected claims are amended to address the concerns raised in the Office Action. Accordingly, it is respectfully submitted that the rejected claims are in proper form and it is respectfully requested that this rejection be withdrawn.

Claims 1-10 are rejected under 35 U.S.C. §112, second paragraph. In response, in the interest of expediting consideration and allowance of the pending claims, the rejected claims are amended to address the concerns raised in the Office Action. With regard to the term "warning" it is used in the sense of notification, for example, to let an operator know that a deviation was encountered, for example to notify the operator of a risk in use of the instrument (e.g., see, present application, page 4, lines 14-21). Accordingly, it is respectfully submitted that the rejected claims are in proper form and it is respectfully requested that this rejection be withdrawn.

In the Office Action, claims 1-3 and 7-10 are rejected under 35 U.S.C. §102(e) over U.S. Patent No. 6,892,090 to Verard et al. ("Verard"). Claims 4-5 are rejected under 35 U.S.C. §103(a) over Verard in view of U.S. Patent No. 7,366,562 to Dukesherer et al. ("Dukesherer"). Claim 6 is rejected under 35 U.S.C. §103(a) over Verard in view of U.S. Patent No. 6,198,963 to Haim et al. ("Haim"). These rejections are respectfully traversed. It is respectfully submitted that the rejected claims are allowable over the presented prior art references for at least the following reasons.

Verard is silent about a quality dimension or optimizing the quality dimension and fails to disclose correcting the spatial positions taking into account the quality dimension as recited in the claims. The claims recite in substantial form that a quality dimension is calculated prior to and in order to be used to correct the special positions.

The quality dimension is described in the specification as follows:

the optimization of a quality dimension Q, which takes into account both the distance of the measured positions r_1 , r_2 from the vascular layout and the measured orientation of the localizers or between the localizers. The orientation between the localizers is determined by the difference (r_2-r_1) of the measured positions (apart from an eventual standardization).

At page 5, the Final Office Action relies on Verard, col. 6, the last paragraph as showing the correcting element recited in the claims. Verard at the referenced col. 6, lines 52-63, states as follows:

To enhance visualization and refine accuracy of the displayed image data, the surgical navigation system can use prior knowledge such as the segmented vessel structure to compensate for error in the tracking subsystem or for inaccuracies caused by an anatomical shift occurring since acquisition of scan data. For instance, it is known that the surgical instrument 12 being localized is located within a given vessel and, therefore should be displayed within the vessel. Statistical methods can be

used to determine the most likely location; within the vessel with respect to the reported location and then compensate so the display accurately represents the instrument 12 within the center of the vessel. (Underlining added for emphasis.)

It is respectfully submitted that the above quoted paragraph and the rest of Verard for that matter does not teach, disclose, or suggest optimizing "a quality dimension including weighted components for measuring a deviation of the plurality of spatial positions, orientation of the instrument, and/or the shape of the instrument section" or correcting "the plurality of spatial positions of the first and second localizers, taking into account a distance of the plurality of spatial positions from a vascular layout represented by the vascular map, a distance between the first and second localizers, the orientation of the first and second localizers, and the quality dimension", as recited in the claims. It is stressed that Verard is silent on the use and the optimization of the quality dimension.

It is respectfully submitted that the claims are not anticipated or made obvious by the teachings of the presented prior art references. For example, Verard does not teach, disclose or suggest, amongst other patentable elements, (illustrative emphasis added) "a processor configured to optimize a quality dimension including weighted components for measuring a deviation of the plurality of spatial positions, orientation of the instrument, and/or the shape of the instrument section, and correct the plurality of spatial positions of the first and second localizers, taking into account a distance of the plurality of spatial positions from a vascular layout represented by the vascular map, a distance between the first and second localizers, the orientation of the first and second localizers, and the quality dimension" as recited in claim 1, and as similarly recited in claim 9.

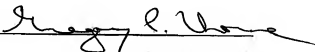
Dukesherer and Haim are introduced for allegedly showing elements of the dependent claims and as such, do nothing to cure the deficiencies in Verard.

Based on the foregoing, the Applicants respectfully submit that the independent claims are patentable and notice to this effect is earnestly solicited. The dependent claims respectively depend from one of the independent claims and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, Applicants deny any statement, position, or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

Gregory L. Thorne, Reg. 39,398
Attorney for Applicant(s)
February 7, 2012

THORNE & HALAJIAN, LLP
111 West Main Street
Bay Shore, NY 11706
Tel: (631) 665-5139
Fax: (631) 665-5101